REMARKS

Claims 1-27 remain in this application. In response to the Office Action, please consider the following remarks.

Objection to the Drawings

In paragraph 1, the Office Action objected to the drawings because Figures 1 and 2 should be designated by a legend such as Prior Art. Corrected drawings are submitted herewith. Upon acceptance of the changes by the examinter, formal drawings will be submitted.

Claim Rejections under 35 U.S.C. §103

The Office Action indicated that claims 2, 4, 6, 7, 9, 12, 14, 15, 16, 17, 19, 22 and 24-27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, the Office Action rejected claims 1, 3, 5, 8, 11, 13, 18, 20, 21 and 23 under 35 U.S.C. 103 as being unpatentable over U.S. Published Application No. 2003/0189952 to Long et al. (the Long reference) in view of US Patent 6,678,316 to Helms et al. (the Helms reference). Applicants respectfully traverse this rejection because neither the Long reference or the Helms reference, either alone or in combination, disclose or suggest the elements of the these claims.

Independent Claim 1 and Dependent Claims 2 through 7

First, with respect to the Long reference, it fails to disclose or suggest the requirements of claim 1 of, "transmitting, by a remote DSL transceiver, first signals containing even numbered carriers for a predetermined period of time to initiate the DSL handshaking to produce R-ETONES-REQ; detecting, by a central office DSL transceiver, the R-ETONES-REQ to produce detected R-ETONES-REQ; determining, by the central office DSL transceiver, alignment of a hyperframe in accordance with a Time Compression Multiplexing – Integrated Service Digital Network (TCM-ISDN) Timing Reference (TTR); transmitting, by the central office DSL transceiver, first response signals containing odd numbered carriers in accordance with the alignment of the hyperframe to produce C-TONES-TTR; acquiring, by the remote DSL

transceiver, TTR synchronization in accordance with the C-TONES-TTR; upon acquiring TTR synchronization, transmitting, by the remote DSL transceiver, second signals containing even numbered carriers to produce R-TONE-TTR; in response to the R-TONE-TTR, transmitting, by the central office DSL transceiver, second response signals containing odd numbered carriers to produce C-GALF1-TTR; in response to the C-GALF1-TTR, transmitting, by the remote DSL transceiver, third signals containing even numbered carriers to produce R-FLAG1-TTR; and in response to the R-FLAG1-TTR, transmitting, by the central office DSL transceiver, third response signals containing odd numbered carriers to produce C-FLAG1." This embodiment of claim 1 describes a method to for extending handshaking range in a DSL system by helping to alleviate interference when a binder containing a number of twisted pair wires shared by xDSL modems and TCM-ISDN disturbers.

On page 4, the Office Action admits that the Long reference fails to disclose "transmitting initializing and response to handshaking in odd and even carriers." In fact, the Long reference merely describes a specially defined TTR Indication signal to indicate the boundaries of a FEXT and NEXT bitmap, as described in paragraph 26 of the Long reference, and nowhere discloses the elements of claim 1. With respect to the Helms reference, the Office Action states that it, "shows transmitting from the central office in odd carrier indices and from the remote node in even number indices (Co. 7 line 52-65)." This statement is taken out of context and mischaracterizes the teachings of the Helms reference. The Helms reference describes aligning the frames transmitted by all CO modems, e.g. all frames trasmittted by all CO modems start and end at the same time, as stated at column 6, lines59 through 66. In addition, the Helms reference describes that the subscribers' modems are designed to align the frames that it transmits with the frames that it receiceives so that its tramsitted frame coincides with its received frame, at column 7, lines 16 through 20. The Helms reference then later states at column 7, lines 52 through 56, "Optionally, the frequencies used by the central office and subscriber modems can be interspersed – either individually or in groups-to virtually eliminate near end crosstalk (NEXT), provided ***that the frames are aligned as described above*** (emphasis added)." Thus, the Helms reference discloses that the frames must be aligned. This type of

alignment is not possible with and teaches away from the embodiment of DSL handshaking between the remote DSL transceiver and the central office transceiver of claim 1.

The dependent claims 2 through 7 add further patentable matter to Claim 1 and thus are further differentiated and patentable under 35 U.S.C. §103 over the Long reference in view of the Helms reference.

Independent Claim 8 and Dependent Claims 9 through 12

First, with respect to the Long reference, it fails to disclose or suggest the requirements of claim 8 of, "transmitting first signals containing even numbered carriers for a predetermined period of time to initiate the DSL handshaking to produce R-ETONES-REQ; receiving first response signals containing odd numbered carriers in accordance with the alignment of a hyperframe to produce C-TONES-TTR; acquiring TTR synchronization in accordance with the C-TONES-TTR; upon acquiring TTR synchronization, transmitting second signals containing even numbered carriers to produce R-TONE-TTR; receiving second response signals containing odd numbered carriers to produce C-GALF1-TTR; andin response to the C-GALF1-TTR, transmitting third signals containing even numbered carriers to produce R-FLAG1-TTR." On page 4, the Office Action admits that the Long reference fails to disclose "transmitting initializing and response to handshaking in odd and even carriers." In fact, the Long reference merely describes a specially defined TTR Indication signal to indicate the boundaries of a FEXT and NEXT bitmap, as described in paragraph 26 of the Long reference and nowhere discloses the elements of claim 8.

With respect to the Helms reference, the Office Action states that it, "shows transmitting from the central office in odd carrier indices and frome the remote node in even number indices (Co. 7 line 52-65)." However, this statement is taken out of context and mischaracterizes the teachings of the Helms reference. The Helms reference describes aligning the frames transmitted by all CO modems, e.g. all frames trasmittted by all CO modems start and end at the same time, as stated at column 6, lines59 through 66. In addition, the Helms reference describes that the subscribers' modems are designed to align the frames that it transmits with the frames that it receiceives so that its tramsitted frame coincides with its received frame, at column 7, lines 16

through 20. The Helms reference then later states at column 7, lines 52 through 56, "Optionally, the frequencies used by the central office and subscriber modems can be interspersed – either individually or in groups-to virtually eliminate near end crosstalk (NEXT), provided ***that the frames are aligned as described above*** (emphasis added)." Thus, the Helms reference discloses that the frames must be aligned. This type of alignment is not possible with and teaches away from the embodiment in claim 8 of a method for a remote DSL transceiver to initiate a DSL handshake.

The dependent claims 9 through 12 add further patentable matter to Claim 8 and thus are further differentiated and patentable under 35 U.S.C. §103 over the Long reference in view of the Helms reference.

Independent Claim 13 and Dependent Claims 14 through 17

First, with respect to the Long reference, it fails to disclose or suggest the requirements of claim 13 of, "receiving first signals containing even numbered carriers for a predetermined period of time to initiate the DSL handshaking to produce R-ETONES-REQ; detecting the R-ETONES-REQ to produce detected R-ETONES-REQ; determining alignment of a hyperframe in accordance with a Time Compression Multiplexing – Integrated Service Digital Network (TCM-ISDN) Timing Reference (TTR); transmitting first response signals containing odd numbered carriers in accordance with the alignment of the hyperframe to produce C-TONES-TTR; receiving second signals containing even numbered carriers to produce R-TONE-TTR; in response to the R-TONE-TTR, transmitting second response signals containing odd numbered carriers to produce C-GALF1-TTR; receiving third signals containing even numbered carriers to produce R-FLAG1-TTR; and in response to the R-FLAG1-TTR, transmitting third response signals containing odd numbered carriers to produce C-FLAG1." On page 4, the Office Action admits that the Long reference fails to disclose "transmitting initializing and response to handshaking in odd and even carriers." In fact, the Long reference merely describes a specially defined TTR Indication signal to indicate the boundaries of a FEXT and NEXT bitmap, as described in paragraph 26 of the Long reference and nowhere discloses the elements of claim 13.

With respect to the Helms reference, the Office Action states that it, "shows transmitting from the central office in odd carrier indices and frome the remote node in even number indices (Co. 7 line 52-65)." However, this statement is taken out of context and mischaracterizes the teachings of the Helms reference. The Helms reference describes aligning the frames transmitted by all CO modems, e.g. all frames trasmittted by all CO modems start and end at the same time, as stated at column 6, lines 59 through 66. In addition, the Helms reference describes that the subscribers' modems are designed to align the frames that it transmits with the frames that it receiceives so that its tramsitted frame coincides with its received frame, at column 7, lines 16 through 20. The Helms reference then later states at column 7, lines 52 through 56, "Optionally, the frequencies used by the central office and subscriber modems can be interspersed – either individually or in groups-to virtually eliminate near end crosstalk (NEXT), provided ***that the frames are aligned as described above*** (emphasis added)." Thus, the Helms reference discloses that the frames must be aligned. This type of alignment is not possible with and teaches away from the embodiment in claim 13 of a method for a central office DSL transceiver to participate in a DSL handshake.

The dependent claims 14 through 17 add further patentable matter to Claim 13 and thus are further differentiated and patentable under 35 U.S.C. §103 over the Long reference in view of the Helms reference.

Independent Claim 18 and Dependent Claims 19 through 22

First, with respect to the Long reference, it fails to disclose or suggest the requirements of claim 18 of, "memory operably coupled to the processing module, wherein the memory stores operational instructions that cause the processing module to: transmit first signals containing even numbered carriers for a predetermined period of time to initiate the DSL handshaking to produce R-ETONES-REQ; receive first response signals containing odd numbered carriers in accordance with the alignment of a hyperframe to produce C-TONES-TTR; acquire TTR synchronization in accordance with the C-TONES-TTR; upon acquiring TTR synchronization, transmit second signals containing even numbered carriers to produce R-TONE-TTR; receive second response signals containing odd numbered carriers to produce C-GALF1-TTR; and in

response to the C-GALF1-TTR, transmit third signals containing even numbered carriers to produce R-FLAG1-TTR." On page 4, the Office Action admits that the Long reference fails to disclose "transmitting initializing and response to handshaking in odd and even carriers." In fact, the Long reference merely describes a specially defined TTR Indication signal to indicate the boundaries of a FEXT and NEXT bitmap, as described in paragraph 26 of the Long reference and nowhere discloses the elements of claim 18.

With respect to the Helms reference, the Office Action states that it, "shows transmitting from the central office in odd carrier indices and frome the remote node in even number indices (Co. 7 line 52-65)." However, this statement is taken out of context and mischaracterizes the teachings of the Helms reference. The Helms reference describes aligning the frames transmitted by all CO modems, e.g. all frames trasmittted by all CO modems start and end at the same time, as stated at column 6, lines 59 through 66. In addition, the Helms reference describes that the subscribers' modems are designed to align the frames that it transmits with the frames that it receiceives so that its tramsitted frame coincides with its received frame, at column 7, lines 16 through 20. The Helms reference then later states at column 7, lines 52 through 56, "Optionally, the frequencies used by the central office and subscriber modems can be interspersed – either individually or in groups-to virtually eliminate near end crosstalk (NEXT), provided ***that the frames are aligned as described above*** (emphasis added)." Thus, the Helms reference discloses that the frames must be aligned. This type of alignment is not possible with and teaches away from the embodiment in claim 18 of a remote DSL transceiver capable of initiating a DSL handshake.

The dependent claims 19 through 22 add further patentable matter to Claim 18 and thus are further differentiated and patentable under 35 U.S.C. §103 over the Long reference in view of the Helms reference.

Independent Claim 23 and Dependent Claims 24 through 27

First, with respect to the Long reference, it fails to disclose or suggest the requirements of claim 23 of, "memory operably coupled to the processing module, wherein the memory stores operational instructions that cause the processing module to: receive first signals containing even

numbered carriers for a predetermined period of time to initiate the DSL handshaking to produce R-ETONES-REQ; detect the R-ETONES-REQ to produce detected R-ETONES-REQ; determine alignment of a hyperframe in accordance with a Time Compression Multiplexing – Integrated Service Digital Network (TCM-ISDN) Timing Reference (TTR); transmit first response signals containing odd numbered carriers in accordance with the alignment of the hyperframe to produce C-TONES-TTR; receive second signals containing even numbered carriers to produce R-TONE-TTR; in response to the R-TONE-TTR, transmit second response signals containing odd numbered carriers to produce C-GALF1-TTR; receive third signals containing even numbered carriers to produce R-FLAG1-TTR; and in response to the R-FLAG1-TTR, transmit third response signals containing odd numbered carriers to produce C-FLAG1." On page 4, the Office Action admits that the Long reference fails to disclose "transmitting initializing and response to handshaking in odd and even carriers." In fact, the Long reference merely describes a specially defined TTR Indication signal to indicate the boundaries of a FEXT and NEXT bitmap, as described in paragraph 26 of the Long reference and nowhere discloses the elements of claim 23.

With respect to the Helms reference, the Office Action states that it, "shows transmitting from the central office in odd carrier indices and frome the remote node in even number indices (Co. 7 line 52-65)." However, this statement is taken out of context and mischaracterizes the teachings of the Helms reference. The Helms reference describes aligning the frames transmitted by all CO modems, e.g. all frames trasmittted by all CO modems start and end at the same time, as stated at column 6, lines 59 through 66. In addition, the Helms reference describes that the subscribers' modems are designed to align the frames that it transmits with the frames that it receiceives so that its tramsitted frame coincides with its received frame, at column 7, lines 16 through 20. The Helms reference then later states at column 7, lines 52 through 56, "Optionally, the frequencies used by the central office and subscriber modems can be interspersed – either individually or in groups-to virtually eliminate near end crosstalk (NEXT), provided ***that the frames are aligned as described above*** (emphasis added)." Thus, the Helms reference discloses that the frames must be aligned. This type of alignment is not possible with and teaches away from the embodiment in claim 23 of central office DSL transceiver capable of initiating a DSL handshake.

The dependent claims 23 through 27 add further patentable matter to Claim 22 and thus are further differentiated and patentable under 35 U.S.C. §103 over the Long reference in view of the Helms reference.

Conclusion

The Office Action indicated that claims 2, 4, 6, 7, 9, 12, 14, 15, 16, 17, 19, 22 and 24-27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. For the above reasons, the other claims 1, 3, 5, 8, 11, 13, 18, 20, 21 and 23 are patentable as well, and the rejections of these claims should be withdrawn. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 240-5324.

Respectfully submitted,

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